



Nathan Schumaker <[REDACTED]>

Latest HexSim NSO scenario

Anthony, Robert G - FW <robert.anthony@oregonstate.edu>**Thu, Jul 8, 2010 at 2:24 PM**

To: Nathan Schumaker <[REDACTED]>, Brendan White <Brendan_White@fws.gov>, Bruce Marcot <brucem@spiritone.com>, "katie.dugger@orst.edu" <katie.dugger@orst.edu>, Brian Woodbridge <Brian_Woodbridge@fws.gov>, Jeffrey Dunk <Jeffrey.Dunk@humboldt.edu>, Craig Ducey <Craig_Ducey@or.blm.gov>, Dave LaPlante <dave@nrg-gis.com>, "Eric_Greenquist@blm.gov" <Eric_Greenquist@blm.gov>

Nathan:

Thanks for putting all of these materials together for our review. There is a lot of detail in the attachments, so I doubt that I have grasped all of the pertinent information. I think you have done a commendable job of putting all of this together, so I just have a few comments or suggestions for you to consider. First, it is my impression that the CA redwood zone is very different than the CA Klamath zone, and it may not be appropriate to combine the two. This is due to the high density of woodrats that occur in second growth redwoods. Lowell Diller may have some data on prey density and home ranges of owls from the redwood zone that would help you separate it from the CA Klamath. Second, I think the score of 60 (60 x 5 hexagons = 300) for nesting habitat is too high and may be the reason that the simulations stabilize as low total numbers of owls and low numbers in some of the DSAs. We know that owls occasionally nest in areas that have low quality and amounts of habitat, so I think you should try a lower threshold for nesting habitat and see what kind of numbers you get with it. In addition, I have answered the questions (in bold) that you posed to us below.

Let me know if you have any questions about my comments.

Regards,

Bob

From: Nathan Schumaker [mailto:[REDACTED]]

Sent: Monday, June 28, 2010 11:52 AM

To: Brendan White; Bruce Marcot; Anthony, Robert G - FW; katie.dugger@orst.edu; Brian Woodbridge; Jeffrey Dunk; Craig Ducey; Dave LaPlante; Eric_Greenquist@blm.gov

Cc: [REDACTED]

Subject: Latest HexSim NSO scenario

Hello all,

7/9/2010

Gmail - Latest HexSim NSO scenario

from Bob Anthony. I've also updated and improved on the scenario description.

Bob was concerned that (1) there was a lot of variability in home range size in the parts of the owl's range that I'd collapsed into a single zone, and (2) that my cut-off values for transitioning between the low and medium, and the medium and high resource classes might be too low.

To address Bob's first concern, I've altered the simulation so that it implements separate home range sizes and resource targets for each province.

To address Bob's second concern, I've changed the target resource values and cut-offs to reflect his suggestions. See the attached scenario description for the details. *These cut-off values are the principal tuning parameters that will increase population size up or down.*

I'd like to get some feedback on this iterate of the baseline HexSim scenario.

To help you size it up, I'm also attaching a PDF file showing population size in time, and an occupancy map. The occupancy map reflects years 150-250. Low to mid to high occupancy areas are shown in colors ranging from red to yellow to green.

I'm also attaching DSA counts (owls per DSA) for years 50-150 and for years 150-250. These are text files.

Remember, this simulation is for female owls only. So population sizes are just females.

I modified the simulation so that it tracks the mean score of home range hexagons, and the mean score of territory hexagons. So finally, I'm attaching these values, so you can see the distributions if you want. They are text files.

Here is what I'd like you to focus on, at minimum:

1. Is the life cycle reasonable? See the first page of the scenario description.

Yes, the life cycle seems reasonable and comparable to what we see in nature.

2. Is my cross-walk between modeling regions and provinces correct and adequate?

Yes, the cross-walk between modeling regions and provinces seems reasonable and adequate, except that it is my impression that the CA redwood zone is different from the CA Klamath zone. This is primarily due to the high abundance of woodrats in regeneration redwood stands. Are there any home range data for the redwood zone that you can get from Lowell Diller to separate this province from the CA Klamath? I think this would be desirable.

3. Are my province-specific data (territory size, territory resource targets, home range size, home range resource targets) acceptable. I suspect there is more variability in home range size than captured here...

Again, I suggest you or Brendan look for data for the CA redwood zone that would allow you to have a separate category for it.

Are my assumptions reasonable in the section titled "notes on range size and resources"?

Based on the scores I see in the attached table of "Explored Area Quality for Home Ranges" I think a score of 60 or more for breeding habitat is a bit too high, and this may be the reason for the low population size when the simulation stabilizes. This also is probably the reason that there are such low numbers of owls in some of the DSAs. We know that owls occasionally nest in areas that have relatively low habitat quality and small amounts of it; therefore, I think this score should be lower. I suggest you try a series of simulations with the minimum value for nesting habitat at 50 and see what the population stabilizes at.

4. Are my assumptions reasonable in the section titled "notes on movement"?

Yes, I think these assumptions are reasonable.

5. Are the population size data in the attached files too high or too low?

As noted above, I think the population sizes are a bit too low, particularly for some of the DSAs (e.g. CLE, OLY, HOOPA, Slmp, TYE).

6. Is it reasonable to assume that breeding quality hexagons are those scored 60 and above (in the MaxEnt data)?

As noted above, I think this value is slightly too high and suggest that you try some runs with a lower value.

7. How will we add the barred owl influence on survival given that I've stratified survival rates by stage class and resource acquisition class?

Hopefully, I have helped clarify this question in the email I sent you earlier this morning but realize this one may take some more work and discussions.

Sorry to throw so much your way. I'll upload the latest owl workspace, including these files (look in the Analysis folder), to Brendan's FTP site.

Nathan

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Nathan Schumaker

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